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# Cost System For Steel Canister Industry

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(A thesis submitted in connection with 1932 final examination conducted by The Canadian Society of Cost Accountants and Industrial Engineers)

THIS Thesis covers the outline of a cost system for the steel canister industry.

It is divided into four parts viz:—

(1) The plant and other pertinent details;
(2) A system for obtaining actual costs of production;
(3) Standard costs;
(4) Budgetary control.

To make some facts stand out clearer, figures are used but these have no connection with figures in the industry, nor are they indicative of the size of plant the writer has in mind.

Some small defects may have been made in the technical side of this work, but, if present, they have no considerable influence, if any, on the system herein outlined.

Advantage has been taken of the number of words allowed, to give as full a description in Part 2, as possible, but Parts 3 and 4 are mostly suggestive of what might be done.

Regarding the illustrations shown, these are not intended to cover every point, but give the essentials that may be added to as required.

## PART 1—THE PLANT AND OTHER PERTINENT DETAILS

### Details of Industry

The industry considered is the steel canister industry—the manufacture of drums and kegs from steel sheets. The containers are for different products and are required in different sizes, the material being coated with different coating materials as required by order. The shape of the product is the same shape throughout, though made in lighter or heavier materials, with the addition of one or two extras to suit different commodities. The further points about the plant and industry are discussed under individual headings and give a skeleton outline of the business in which the cost system, to be discussed later, has been installed.

### Plant Buildings

The plan of buildings chosen is the I type, for two broad reasons. First, the article to be manufactured is more bulky than heavy. That is, the main part of the product is a steel sheet rolled in the form of a cylinder, naturally leaving a hollow space. In the larger sizes this hollow takes up a great deal of space and is sometimes very heavy, depending on the gauge of steel sheet used. If upper storeys were built (even for a two storey) elevators would have to be used, but with the bulkiness of the articles, it would require a great many elevators which would add to the cost of the buildings. Again, time would be lost by operators trying to get 6 drums on when 5 is the utmost the elevator will take. Certainly, the difficulty could be overcome by putting the machine shop and service shops on the second storey, but the lengths of the steel bars and rods used in the machine shop make it rather awkward, while the next factor makes it more satisfactory to have a single storey building.

Secondly there are four shops which require furnaces and whether coupled into one chomney, which might be high enough, the odours would certainly reach the higher storeys to a greater extent, than one on the same level. Each of the main departments require the services of one or more of these four shops, either for their raw materials or an advanced stage in their production, that a great deal of conveying is required which would be only aggravated and clogged if it had to be sent vertical as well as horizontal. The single storey building therefore, aided the speed of production and kept orders in their proper place in production.

**Location of Plant**

In considering location the only considerations that can be dealt with in a work of this nature are urban or city location. Such factors as nearness to raw materials, to power, to markets, to capital, are understood and are not applicable to every region to the same degree, but the two factors mentioned are worth while considering.

The labour requirements for the plant can be classed as semi-artisan, that is, a higher intelligence is required than the mere labourer, but not as much as the die-sinker or tool-setter. This fact makes it quite possible to pay a little higher wages and allow the workers to travel, without harming the chances of competition because of increased price of labour. Other factors might offset this.

The plant consists of two buildings, one being composed of a foundry and three dipping shops, attendant with their many odours and smoke; a condition which might not be allowed in a city, that an urban location would be desirable.

Therefore three reasons for urban location are:—

(1) Large area of space required for buildings at the cheapest cost, still keeping in view efficiency of location. (2) Semi-artisan supply of labour required which does not require strict adherence to city as if it were mere labour. (3) Any obnoxious smell or smoke that may be blown around offends no-one.

**Departments**

The plant is divided into various departments, detailed as follows:—

(1) Drum (2) Welding (3) Machine (4) Galvanizing (5) Leadcoating (6) Tinning (7) Foundry (8) Paint (9) Tool.

The service departments are:—Stores, substation, heating, finished goods and shipping.

As all orders do not follow the same sequence a straight-forward method of manufacture is not possible and there is bound to be some repeating of journeys.

The functions of the departments are as follows:—

(1) Drum —To cut sheets to specified sizes, form bodies and ends, punch holes where required, make necks and caps, double seam and groove seam, form and fit hoops and handles, solder in necks and rings and other soldering work.
(2) Welding —To weld all specified seams, hoops, rings, etc.
(3) Machine —To perform, by machine, operations on rings, castings, bungs, etc. and do all necessary machine work.
(4) Galvanizing—To do all necessary galvanizing work specified.
(5) Leadcoating—To do all necessary leadcoating work specified.
(6) Tinning —To do all necessary tinning work specified.
(7) Foundry —To make castings in brass or iron as specified.
(8) Paint —To paint all items specified.

PLATE 1

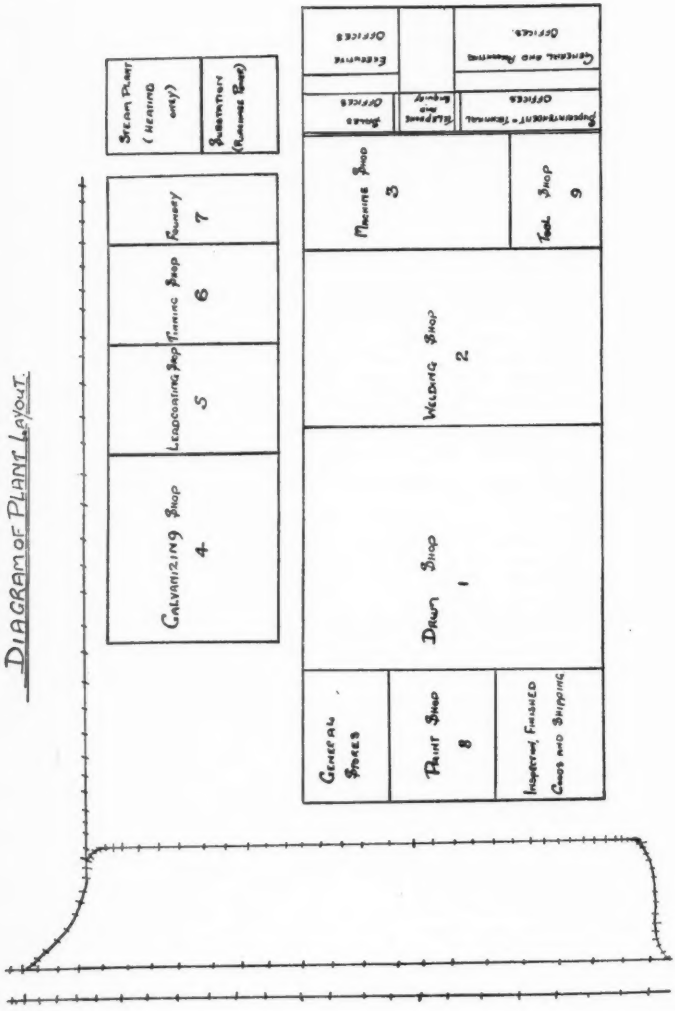
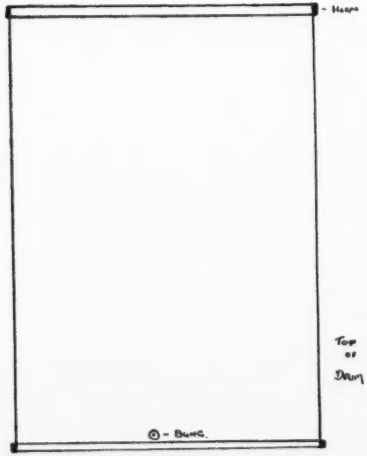


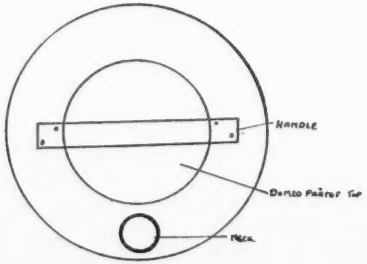
DIAGRAM OF PLANT LAYOUT.
GENERAL STORES
PAINT SHOP 8
DRAWING SHOP 1
INSPECTING FINISHED CASES AND SHIPPING
WELDING SHOP 2
MACHINE SHOP 3
FORGE SHOP 9
PHOTOGRAPHIC & TECHNICAL OFFICES
GENERAL AND ACCOUNTING OFFICES
PHOTO OFFICES
BLUEPRINT AND BLUEPRINT STORAGE
ELECTRIC OFFICES
GALVANIZING SHOP 4
LEADCOATING SHOP 5
PLUMBING SHOP 6
FOUNDRY 7
STEAM PLANT (HEATING ONLY)
BASEMENT (RAILROAD TRACK)

# Diagram of Steel Drum and Component Parts

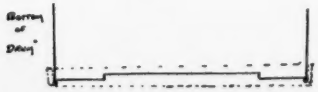



Body of Drum

Body, Top, Bottom } Made from Black Steel Sheets, either Annealed or Finished Product, Black, Uncoated Tinned or Galvanized




Body



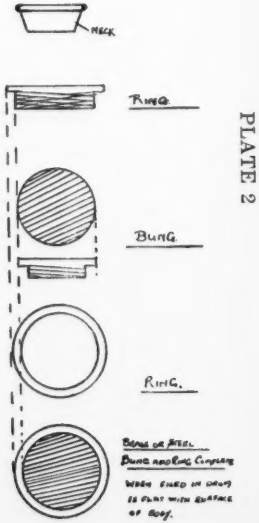




PLATE 2

(9) Tool —To make all tools and dies, re-cut dies when necessary. Keep control of maintenance men for machines, building repairs, etc.

Service —To do all work specified which their name implies.

All departments are under the supervision of the superintendent. Each specified department has a foreman and assisting foreman, who is one of the workers in the department slightly higher paid than the rest. An exception is departments No. 4, No. 5 and No. 6, these three being under one foreman and assistant. Departments No. 9 and No. 3 require the highest type of foreman, while the tool room is skilled labour. This plan can be increased according to the size of the plant, which in turn depends on the amount of production.

The authority is line authority and all orders must go through the recognized channels. In the same way all reports and details must go through the recognized way.

### Routing of Orders

The principle or master order comes from the head office to the superintendent's office. It is there placed on the production flow chart, the type of item specified and instructions made to issue departmental orders. Orders are then placed on stores for materials, the order on the drum shop details, the cutting sizes of the sheets, and what to do with the amount left over, the necessary parts of manufacture it has to perform. The welding shop receives its instructions as to what parts to weld, and so on, till all the departments having some part to perform in the production of the order are notified as to what they have to do and when they have to do it. All production and standing orders are issued from the office of the superintendent (sometimes called the production manager). The planning department is a branch of the superintendent's office, and this department issues all production orders, while the maintenance department issues orders for all maintenance work chargeable to standing orders. All standing orders requiring to be fulfilled by the plant (the production part is meant) must be placed on the flow chart so as not to confuse production.

### Return of Cost Reports and Details of Production, etc.

As previously mentioned all cost reports and details of production must be returned through the same channels as they were issued. No workman should give his job report direct to the Superintendent, but he should give it to his foreman (or it will be collected) at the end of each day's work, or when he has done all he is required to do on that order. A shop clerk is attached to all departments to see that all time is correctly filled in, and it is advisable he be put in charge of collecting all the reports and slips made out, or filled in by workers, with which his department are concerned, at the end of each day. Completed slips and reports are then scrutinized by the foreman and signed by him, and if correct are returned to the superintendent's office, and then finally to cost office. Upon receipt of these forms the cost office proceed to enter the details on the cost sheet, but that will be discussed under the heading of cost system.

### Sample Head Office and Work's Orders

In the next step, an order has been received from a customer and first is shown the instructions from the head office to the planning department. Secondly, is shown the work's master specification which is made out before individual departmental orders are made out. This is to give a better idea of the sequence of production.

## COST SYSTEM

(1) ORDER TO MANUFACTURE

TO PLANNING DEPARTMENT, No. 339

(Attention of Superintendent.)

PLEASE MANUFACTURE THE UNDERNOTED ITEM(S) AND SHIP AS PER DATE SPECIFIED TO Messrs. Armstrong & Co. Ltd., Toronto Road, Regina, Sask.

PER. C.N. Rly. DATE OF DESPATCH. 23rd March 1932

SIGNED ORDER CLERK

---

100—5 Gall. Drums, Patt. 30 Leadcoated, 2 Hoops, 2" neck in top and ½" Brass Screw Bung near bottom. Approx. Weight 11/11½ lbs.

---

WORKS SPECN. ISSUED. 15th March 1932 BY

PRODUCTION ORDER NO. 2301 APPROVED. SUPERINTENDENT.

PRODUCTION SPECIFICATION

PRODUCTION ORDER No. 2301 No. 32/430

DATE OF DESPATCH. 23rd March 1932 DATE. 15th March 1932.

ABOVE DATE APPROVED.

PLANNING DEPARTMENT

---

HEAD OFFICE ORDER No. 339

100—5 Gall. Drums Patt. 30 Leadcoated, 2 Hoops, 2" neck in top and 1½" Brass Screw Bung near bottom. Approx. Weight 11/11½ lbs.

MASTER SPECIFICATION

| | |
|---|---|
| BODY | 72" x 36" x 20g. leadcoated. |
| ENDS. (73" x 36¼") | 11" x 20g. double seamed, leadcoated. |
| HOOPS 2/ | 36½" x 1½" x 12g. shrunk on leadcoated |
| HANDLE | 6" x 1" x 14g. black, rivetted on. |
| NECKS & CAPSULES | 2" for use with Capsules closing machine. |
| SCREW BUNG | 1½" all brass No. 1120C. |
| BRASS RING | Soldered in 1120C. |
| PAINT | Red R.T.I. |

---

SPECIFICATION MADE OUT BY SHIPPING INSTRUCTIONS GIVEN

CUSTOMERS APPROVED

Armstrong & Co. Ltd., Regina

SUPERINTENDENT.

---

From the above specification requisitions would be sent to stores for the various materials—steel sheets, hoops, handles, tin plates. Production orders would be sent to leadcoating shop to coat steel sheets and hoops. The drum shop order would state to cut sheets, groove seam of body, double seam ends, shrink on hoops, form and rivet handle, cut neck and capsules, solder in neck and brass rings. The foundry would cast the brass screw bungs and rings, which would be machined by machine shop.

To follow the sequence through the plant, the black sheets would be sent from stores to leadcoating shop, and after coating, to the drum shop to be cut to size. The flat sheets would then be punched for the 1½" ring and then rolled to form body, and then seams would be grooved. The 1½" ring would then be soldered in. Ends are now double seamed into body, both at the same time. Hoops are then shrunk on by machine, and handles have been rivetted on top. The bungs which have been cast along with rings, and machined by the machine shop are now screwed home. The drum is now ready for inspection and testing and if satisfactory, is ready for despatch after painting. Capsules are sent along in a parcel for use with customers own capsule machine.

The first part of this thesis is a sketch of the plant as it stands and an idea of the arrangement of the departments, with the sequence of operations for one order through the plant. To describe it more fully would take up too much space and words, and would be departing from the purpose of this thesis.

## PART 2—A SYSTEM FOR OBTAINING ACTUAL COSTS OF PRODUCTION

### Reason for Cost System in Force

The product of the plant is made up against customers' orders, and only in cases where there is a contract in force, are manufactured goods held in Finished Goods Warehouse. As described in Part 1, the customers' order may be said to be the authority to manufacture, as it is only when this is received that the various factory orders are made out. The customers' orders will be for different sizes and different types, to suit different products, and on analysing the number of customers, it is found they can be divided into groups. Paint, syrup, malt, disinfectants, tar and benzole, are some of the trades catered for, and in turn some firms in one group will serve different markets. Therefore, each order must be put though separately and records kept accordingly. A specific order cost system is therefore employed.

On some of the component parts which are alike in different orders, such as a 2" neck in any size between one and ten gallons, a group order may be put through but each production order will be able to be identified in the group put through production.

Process costs, or rather departmental costs, are employed in the dipping departments, as each job cannot be distinguished as to the absorbing of material, and it is impossible to calculate the evaporation of material and formation of the residues chargeable to each production order. The cost of operating these departments must be applied to the production passing through them for the period that the expense was incurred, each part of production bearing its share proportionately to some base common to all production.

### Charging Materials to Cost

The main item of stock, in quantity only, is steel sheets. After a great deal of experimenting, it was found that through different drums required different sized sheets, too much money was tied up in slow moving stock, if all sizes of sheet were stocked. Calculations were therefore made and basic sized sheets were put in stock, each of these basic sheets permitting cutting to several sizes of drums. For example a sheet 66" x 36" may supply 12 bodies for one gallon size, it could also supply 28 ends for three gallon size. All sheets are bought by weight at so much per ton, but are released to production at so many sheets per order. A difference arose as to the better course of releasing

them by weight per sheet, or so much per sheet. Owing to the differences between supplier's scales and the plant scales, it was decided to charge them out at so much per sheet, and another argument for doing so, is that all sheets are supplied within 5% of the specified weight, this being the rolling margin. Therefore, when an order was supplied it always stated on the invoice or advice note, so many sheets per bundle, as well as weight, so that the advice to storekeeper stated the unit price per sheet. Freight and switching charges are added to the cost of materials to give the laid down cost.

Hoop iron comes in bundles and is charged by weight, the basis for releasing to production being by weight also. Tinplates are purchased at so many sheets per box, at a price per box of so many sheets, and is released to production at so much per sheet.

Brass is delivered direct to the foundry, and is clean scrap brass, generally purchased locally. Scrap lead is also purdhased locally and delivered direct to the leadcoating department. Tin for the tinning department is purchased on contract and is delivered direct to the tinning department. Spelter for the galvanizing department is treated in the same manner.

The reason for supplying these materials direct to the dipping baths is that, a quantity has to be added at different times, and to procure it from a central store only means double handling. Brass and lead scrap is of varying forms, and no storeroom could be kept in a tidy manner with it lying around. The scrap is therefore kept at one side of the shop and a note is kept of the amount put into process. Sheets are kept in the stores ledger for spelter, tin, brass and lead, but the storekeeper receives a note of all received, and is handed a note of amounts taken from production each day. It is understood of course, that the storekeeper does not stand responsible for these special items, but it centralizes control of material into one set of records, and it is an easier and surer way to receive releases for accounting purposes.

When an order has been received from a customer, as stated in Part 1, the planning room issues stores requisitions for the material required. The storekeeper will supply the materials required and enter the requisition in the store ledger, pricing the requisition from the ledger. If all materal supplied, he will initial 'requisition as having been completed and send it with any other completed requisitions to the office. With regard to unfulfilled requisitions, which would not come from planning room, of course, but from foreman, an extract is made on to a purchase order requisition for the items not supplied. A note to this effect being made on the original requisition. The original requisition is then considered completed. This aids all materials supplied that day to be accounted for in process as soon as the acounting entries are made.

To enlarge on perpetual inventory. All material that is invoiced or advised as having been dispatched is advised to the storekeeper. The receiving clerks count and inspect goods and fill in the amount received or weight, whichever is required, inspection at this phase meaning general condition. This form filled in by the receiving clerks, is checked with the particulars supplied by purchasing department, by the storekeeper, who initials the purchasing department advice and therefore, payment and entries in the records can be made. The storekeeper now enters his materials in the ledger at the price advised and the accounting have charged it to raw materials. As mentioned, requisitions for stores come from the foremen or the planning department: these requisitions being priced from the stores ledger and entered accordingly. At the end of the day, the requisit-

ions are all recapitulated under production or standing orders, the entry crediting stores and debiting work in process then being made. Therefore, the stores ledger balances with the stores account in the general ledger, and if a physical inventory was made each day the individual items in the stores bins and racks would agree with the stores ledger. The individual items in the stores would agree with the store account in the general ledger, as both the physical inventory and stores account would agree with the amount shown in the stores ledger.

In these departments in which process costs are used, the material is charged into work in process, whenever it is taken into production, this charge being made from the slip handed to the storekeeper from the foreman of the departments. Separate cost sheets are made up and charged to each job order going through. It will be easily seen however, that those materials are under perpetual control though the amount of material in the pots has always to be estimated.

When goods are received from stores in a department the foreman is at once notified, when he gives directions as to how they are to be put in production and when. Requisitions sent to the storekeeper by the planning room, are arranged so as to allow the order to take its allotted time in production, neither before nor after. The foreman is therefore not loaded or starved with materials, and production in the department goes evenly on.

All material issued and not required for production is returned to store on materials returned slip stating charge number to be credited.

### Charging Labour to Cost

The principle of accounting for labour is that all labour paid for is charged to production. This requires two sets of records—the total time worked by an employee for the period, and the various jobs or processes he has spent his time on during that period. Invariably these must agree, and somewhat like perpetual inventory of materials, the total amount paid an employee at the end of the week represents the amount of labour he has put out on production or standing orders and processes.

When a worker starts work in the morning and after lunch he registers his time on a time clock, several of them being placed at various positions throughout the plant, and when he goes out at midday or evening he registers in the same way. This he does for each working day. As explained in Part 1, each department has its own clerk, and the employees of a department when they pass the office in the morning are given their daily time sheets. On starting work, the worker puts the time he is starting and the order number of the work he is about to start, on the time sheet. When he has finished that order he marks down the finishing time, and if piece work the number finished, then starts the next order, marking down beginning and finishing time as before. This is done on all work which he does, and the shop clerk sees that he puts a charge number on all his work. This can be done by time-clocks, only it requires several clocks situated throughout the whole department and means a considerable outlay when the plant is considered as a whole. There can be no doubt that the clock is more accurate, as the worker stamps the time at the beginning and completion of a job, (the order number can be stamped as well) and in some cases the machine shows the time elapsed. No time will be gained by their use as the time occupied in walking from place of labour to the clock would take as long and probably longer as the employee would take to write it. The method of using the

clock for job times is more accurate, legible and orderly, providing uniform reports throughout, but as mentioned, is more expensive.

All employees of those departments controlled by job costs, use daily time sheets for reporting individual jobs, the process workers only stamping their time as they enter or leave the plant.

At the end of the day, all time sheets are collected and both time and piecework rates extended. The time cards are collected and extended. The cost of piece work is taken from the detail sheets and posted to the payroll book, only those pieces passed inspection being paid for. The value of day labour is posted from time cards to payroll book. Therefore charged to daily payroll are piecework totals as shown by daily time sheets, day and process labour as shown by time cards. Some day labour may have detail time sheets, when this should be checked with the time cards, to see that a full distribution is received for amount specified to be paid. All other day labour except process labour, will be indirect and therefore chargeable to standing orders. From the detail time sheets and time cards are posted amount to production and standing orders and to process department. There the totals shown to these three groups agree with the total shown on the payroll book. Incidentally, all departments use different coloured cards.

The workers are divided broadly into two groups; those doing direct labour and those doing indirect labour. If a direct labour worker does any work chargeable to overhead, it is immediately picked up in his daily time sheet by the charge number. For those employed on nothing else but indirect labour, a different time sheet is used, as they will be doing various work for plant and product. In the process departments the two broad classes are just shown and no further detail is required. With regard to the repair of machines, the time of repairs on each machine is shown, the machine being identified by the number of its production centre and individual number.

Two rates are employed in paying the workers—the hourly rate and the straight piece work rate. The departments using the hourly rate are galvanizing, leadcoating, tinning, foundry, paint, shipping, stores and tool. The piecework rates are used in drum, welding and machine. All indirect labour is paid by the hour.

The reason for paying the shops named, by the hour, was that the men could not work any quicker than the metal would work with them. For instance, the time taken to galvanize a drum is known, and it is also well known he could dip three times as many drums as he takes to dip one, as far as dipping alone is concerned, but if he dips too fast the drums will not be well galvanized and the purpose of galvanizing will be defeated, and so it is with other dipping shops. The foundry cannot make castings any quicker than the metal will melt and as this is very fragile work, a little care is cheapest in the end. Tools and dies are very intricate work and as a large amount of money is tied up in these items, careful work is a consideration,

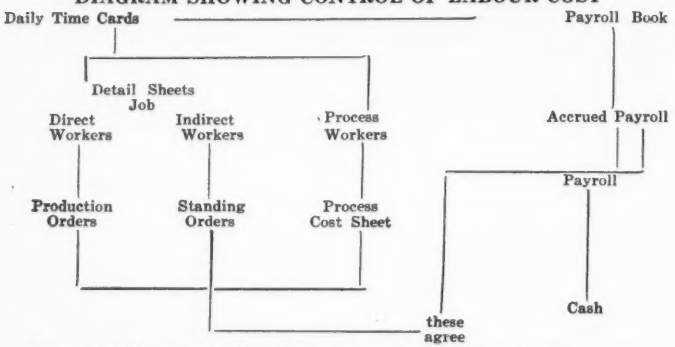
In the drum, welding and machine shops each employee is on the same type of production for a period of some duration. It is comparatively simple for him to speed up his work to earn more pay, but inspectors must be used, and workers should only be paid for work passed inspection.

To sum up the method of accounting and control of labour is as follows:—

(1) Each worker registers his time as he goes in and out, morning noon and night by means of a time card, the timekeepers being present when all times are punched.
(2) Employees in machine, welding, drum and foundry departments are given individual detail time sheets. Indirect workers given different coloured ones.
(3) Employees in other departments have no more recording other than (1) to do.
(4) Each day's individual time sheets are sent to payroll office as well as time cards. These are extended and balanced, and the amounts posted to the daily payroll sheet.
(5) The value of weekly or period payroll is posted to payroll account and the balance between it and the amount paid for wages is the accrued payroll at that date.
(4) Details are taken from the individual time sheets and posted to the production or standing orders. The amount of time shown on the time card of process workers is posted to the process cost sheet of the department concerned, the foreman supplying the information as to direct or indirect labour.
(7) The cost of work as shown on the detail sheets of job workers plus the time of the process workers and time of indirect workers, will be the day's payroll and will equal the amount entered payroll account. The total time cards (piecework earned being entered from detail sheets) of the plant extended and calculated will agree with the amount shown on payroll.
(8) Each department has a different coloured time card.

Payment of wages is by cash and is made by a member of the cashiers department. Each employee passes the wicket and gives his number, and when his envelope is drawn from container he states name. If the name agrees with the one written on the envelope the envelope is handed over. Foremen are present at paying of wages.

**DIAGRAM SHOWING CONTROL OF LABOUR COST**




**Charging Manufacturing Expense or Factory Overhead to Cost**

The accounting for factory overhead is divided into three broad problems:

(1) Collecting all items that make up the overhead from the general books.
(2) Allocating these to the different departments or units.
(3) Charging these to production on the fairest basis.

In discussing the first problem, the principle consideration is where do these items originate or collect, and it was disclosed that these originated in special purchases, stores, releases, payroll analysis and journal entries. The purchases are special maintenance parts and are not put through stores. Stores issued are for sundry supplies, as waste, oil, grease, pieces of steel, coal, etc. Labour spent on the various items is disclosed by the analysis. The journal entries are special accounting department memos of payment made, schedule of depreciating, salaries etc. There are also charges from other departments such as dies and tools from tool room.

A system of symbols are used to answer problem No. 2, each item on the schedule of factory overhead, being given a symbol. When any material is bought or supplied, any labour or supervision spent on a certain item, the symbol is used. For example if any labour, material or supervision is supplied for building repairs and maintenance, the symbol 00 is used. Further, if the repairs were done for department 2 the charge would be 200, similarly for department 9 the charge would be 900 and so on.

Problem No. 3 is a larger one and the first thought is what are the prime functions in each department or operation. Investigation showed that in all departmets except department 3, the prime function was the speed of the labourer or workman. In department 3, the prime function was the speed of the machine. Therefore the problem is divided into two parts, that all departments except No. 3 must have their overhead based on labour and department No. 3 on machine hours. Basing overhead on labour has a twofold aspect—the time or value of labour. Most of the labour is semi-skilled and has a varying scale of wage rates, but by carefully grading the workers, those having the higher skill were given the jobs requiring the most skill and care. Further observation showed the longest time jobs required the most supplies (on an average) it was therefore decided to work on the theory that the overhead increased in proportion to the time spent on doing the work. Therefore two basic units were established for distributing factory overhead—the direct labour hour and the mochine hour.

Three summary sheets are required to be made each month or period. (1) A summary of factory expenses; (2) A summary of distribution to departments; (3) A summary of actual basic unit rates. The preparation of these summaries is described next.

Each expense incurred is charged in the accounts payable records of the accounting department, or is found for transfer in the distribution sheets of the cost office. The charge numbers have been supplied by those for whom the work was done or by those requisitioning the material, labour etc. further charges being supplied by the Accounting department, such as distribution for salaries, etc. All charges are collected under the various expense schedule items, with their source of entry, on the summary of factory expenses, this showing the total amount of factory overhead to be distributed to departments.

(To be concluded in December)

(The forms accompanying this article are reproduced on the following pages in condensed style, indicating only the general arrangement and the information required).

### 3. DEPARTMENT PRODUCTION ORDER

DATE .....  No.

To ..... MANUFACTURE THE FOLLOWING AND DELIVER TO ..... by ..... CERTAIN Planning Department

| QUANTITY | DESCRIPTION | QUANTITY COMPLETED | DATE |
|---|---|---|---|
| | | | |

DATE RECEIVED DEPT. .....  FOREMAN

DATE COMPLETED .....

SPECIFICATION

### 4. STORES REQUISITION

NO. .....  DATE .....

PLEASE SUPPLY THE FOLLOWING MATERIAL TO .....SHOP

| QUANTITY | DESCRIPTION | SIZE | RATE | VALUE |
|---|---|---|---|---|
| | | | | |

ORDER COMPLETED

UNCOMPLETED—SHORTS REQUISITIONED .....

ABOVE ITEMS RECEIVED .....  EXTENSIONS O.K. .....

POSTED TO

CHARGE NO. .....  COST RECORDS .....

### 5.

ARTICLE  DESCRIPTION  STOCK MAX.  BIN. NO.

SIZE  GAUGE  UNIT WEIGHT  MIN.

| Receipts | | | | | | Disbursements | | | | Balance on Hand | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date of Receipt | Purchase Order | Quantity | Weight | Amount | Unit Price | Date | Requisition | Quantity | Amount | Quantity | Value |
| | | | | | | | | | | | |

STORES LEDGER SHEET

### 6. STOCK MATERIALS RETURNED

CREDIT DATE

GOOD ENOUGH QUALITY

THE FOLLOWING ITEMS ARE NOT REQUIRED

| QUANTITY | DESCRIPTION | SIZE | RATE | VALUE |
|---|---|---|---|---|
| | | | | |

FOREMAN SHOP COST RECORDS RECEIVED BY

POSTED STORES LEDGERKEEPER APPROVED SUPT.

### 7.

NO.

Name .....

| DAY | Morning IN | Morning OUT | Afternoon IN | Afternoon OUT | Overtime IN | Overtime OUT |
|---|---|---|---|---|---|---|
| MON. | | | | | | |
| TUES. | | | | | | |
| WED. | | | | | | |
| THURS. | | | | | | |
| FRI. | | | | | | |
| SAT. | | | | | | |
| SUN. | | | | | | |

KEEP THIS SIDE OUT

NO.

Name .....

Time Worked, Week Ending

Regular Time Hrs. @

Overtime Hrs. @

Piecework

Extensions .....Checked.....

Foreman

No. .....

Name .....

Total

Wages .....

Deductions .....

Amount

Enclosed .....

PAY ENVELOPE

TIME CARD

## 8. DAILY LABOUR REPORT

**Individual Sheet. (Direct)**

NAME NO.
TIME STARTED MORNING NOON NIGHT

| Order No. | Operation No. | Quantity Produced | Quantity Passed | Time Stopped | For Office Use Only: Time Spent | Rate | Labour Cost |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Department .....
Date .....
Approved .....Foreman

Day Work
Piece Work
Overtime
Total

## 9. PAYROLL SHEET

WEEK ENDINNG

| CHECK NO. | NAME | Day Work | Piece Work | Overtime | Gross Amount | Deductions | Net Amount |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

## 10. PLANT LEDGER SHEET

No. .....
Purchase Order No.
Purchase Price .....
Installation .....

Item .....
Make .....
Date of Purchase
Supplier .....
Total Installed Cost .....

Production Centre .....
Department .....
Estimated No. of Years .....
Estimated Salvage Value .....
Amount to Depreciate .....

| 19— | | 19— | | 19— | | 19— | |
|---|---|---|---|---|---|---|---|
| Month | Amt. | Month | Amt. | Month | Amt. | Month | Amt. |
| | | | | | | | |

Month Amt. Month Amt. Month Amt. Month Amt. Month Amt.

## 11. MONTHLY EXPENSE SUMMARY — FACTORY

| | Sym-bol | Total | Purchases | Stores | Payroll | Journal |
|---|---|---|---|---|---|---|
| **Building Expense** | 00 | | | | | |
| Repairs and Maintenance | 01 | | | | | |
| Depreciation | 02 | | | | | |
| Rent, Taxes and Insurance | 03 | | | | | |
| Cleaning and Sundries | 04 | | | | | |
| **Management Supervision** | 10 | | | | | |
| Repairs to Furniture and Fittings | 11 | | | | | |
| Depreciation | 12 | | | | | |
| Wages | 13 | | | | | |
| Salaries | 14 | | | | | |
| Stationery and Misc. Supplies | 15 | | | | | |
| **Production Expense** | 30 | | | | | |
| Repairs and Maintenance | 31 | | | | | |
| Depreciation | 32 | | | | | |
| Cleaning and Sundries | 33 | | | | | |
| Wages of Time and Payroll Office | 34 | | | | | |
| Wages of Gatemen and Porters | 35 | | | | | |
| Expense of Doctor and Hospital | 36 | | | | | |
| Insurance and Pension Fund | 37 | | | | | |
| Welfare Expense | 38 | | | | | |
| Spoiled and Defective Work | 39 | | | | | |
| Scrap Material—Adjustment a/c | 40 | | | | | |
| Idle and Waiting Time | 41 | | | | | |
| Inspection | 42 | | | | | |
| Dies and Tools | 43 | | | | | |
| Indirect Labour | 44 | | | | | |
| Electricity | 45 | | | | | |
| Substation Charges for Equipment | 46 | | | | | |
| Heating Supplies—Fuel, Etc. | 47 | | | | | |

## 12. MONTHLY EXPENSE SUMMARY—SALES, ADMINISTRATION AND FINANCIAL

| | Sym-bol | Total | Purchases | Stores | Payroll | Journal |
|---|---|---|---|---|---|---|
| **Sales Expense** | 1000 | | | | | |
| Salesmen's Salaries | 1001 | | | | | |
| " Commissions | 1002 | | | | | |
| Agency Expenses | 1003 | | | | | |
| Advertising | 1004 | | | | | |
| Catalogues, Printing, etc. | 1005 | | | | | |
| Sales office salaries and expense | 1006 | | | | | |
| **Administrative Expense** | 1010 | | | | | |
| Office Rent and Taxes | 1011 | | | | | |
| Heating ond Lighting | 1012 | | | | | |
| Insurance | 1013 | | | | | |
| Depreciation | 1014 | | | | | |
| Misc. Freight and Express | 1015 | | | | | |
| Stationery | 1016 | | | | | |
| Postage | 1017 | | | | | |
| Directors Fees | 1018 | | | | | |
| Administrative Salaries | 1019 | | | | | |
| **Financial Expense** | | | | | | |
| Bad Debts Reserve | | | | | | |
| Bank Interest | | | | | | |
| Reserve for Discount | | | | | | |

## 13. MONTHLY OVERHEAD DISTRIBUTION

For Month of 19

| Basis of Allocation | ITEM | Symbol | TOTAL | Departments 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Stores | Substation | Steam | Finished Goods and Shipping |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Building Expense | 00 | | | | | | | | | | | | | | |
| Actual | Repairs & Maintenance | 01 | | | | | | | | | | | | | | |
| Sch'le | Depreciation | 02 | | | | | | | | | | | | | | |
| Area | Rents, Taxes & Ins'r'nce | 03 | | | | | | | | | | | | | | |
| " | Lighting | | | | | | | | | | | | | | | |
| " | Heating | | | | | | | | | | | | | | | |
| " | Cleaning and Sundries | 04 | | | | | | | | | | | | | | |
| | Man'gem't & Superv's'n | 10 | | | | | | | | | | | | | | |
| Actual | Repairs to Furniture & [Fittings | 11 | | | | | | | | | | | | | | |
| Sch'le | Depreciation | 12 | | | | | | | | | | | | | | |
| Payroll | Wages of Foremen [and Assistants | 13 | | | | | | | | | | | | | | |
| Analysis | | | | | | | | | | | | | | | | |
| Approx. | Salaries of Supt. & [Staff | 14 | | | | | | | | | | | | | | |
| Distrib'n | | | | | | | | | | | | | | | | |
| " | Stationery & Misc. Sup. | 15 | | | | | | | | | | | | | | |
| | Production Expense | 30 | | | | | | | | | | | | | | |
| Actual | Repairs & Maintenance | 31 | | | | | | | | | | | | | | |
| Sch'le | Depreciation | 32 | | | | | | | | | | | | | | |
| Actual | Cleaning and Sundries | 33 | | | | | | | | | | | | | | |
| Direct | Wages of Time and [Payroll Office | 34 | | | | | | | | | | | | | | |
| Labour | Wages of Gatemen [and Lodge Porters | 35 | | | | | | | | | | | | | | |
| Hours | Expense of Doctor and [Hospital | 36 | | | | | | | | | | | | | | |

| | | |
|---|---|---|
| | Welfare Expense | 37 |
| Hours | Insurance and Pension [Fund | 38 |
| Actual | Spoiled & Defective [Work | 39 |
| Scrap A/C | Scrap Adjustment A/C | 40 |
| Daily Reports | Idle and Wait'g Time | 41 |
| Product Orders | Inspection | 42 |
| Standing Orders | Dies and Tools | 43 |
| Payroll Analysis | Indirect Labour | 44 |
| Actual | Electricity | 45 |
| " | Substation Charges for [Equipt. | 46 |
| " | Supplies for Heating | 47 |

Material Value Requist. Stores Consump. Substation Orders

Despatch Finished Goods and Shipping

## 14. MONTHLY OVERHEAD RATES

| | DEPARTMENTS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 4 | 5 | 6 | 7 | 8 | 9 |
| Expenses as per Summary Sheet | | | | | | | | |
| Number of Direct Labour Hours | | | | | | | | |
| % To be applied to each Production Order per direct [Labour Hour Standing) | % | % | % | % | % | % | % | % |

| | DEPARTMENT 3 PRODUCTION CENTRES | | | | | |
|---|---|---|---|---|---|---|
| | Total | A | B | C | D | E |
| Expenses as per Summary Sheet | | | | | | |
| No. of Hours Worked by Machines | | | | | | |
| No. of Machines | | | | | | |
| Total No. of Machine Hours | | | | | | |
| % To be applied to each production Order on basis of [Machine Hour Standing) | | % | % | % | % | % |

| | |
|---|---|
| Total, Sales, Administration and Financial Expense as per Summary | |
| Total Number of Direct Labour Hours | |
| % To be applied to each Production Order on Basis of Direct Labour Hour | % |

# DOMINION GOVERNMENT FINANCIAL CONTROL

(From the Montreal Gazette, Sept. 20, 1932)

WHILE it has been in operation only six months the advantages that have already accrued from the new accounting system in the federal government offices fully warrant the expectations entertained. Not only have there been actual, positive savings for the treasury but considerable economies have been effected through prevention of avoidable expenditures. Previously these expenditures were neither avoided nor prevented. What is worse, the appropriations made by Parliament were seldom any criterion of the public expenditure. Sometimes the outlay was less than the money voted by Parliament, and, on the other hand, frequently the outlay exceeded the appropriation. In other words, there were overdrafts by departments, and in the case of one branch of a department not so long ago the amount spent in a fiscal year exceeded the amount appropriated to the branch by Parliament by over $1,500,000. To those engaged in private business and to the larger number engaged in paying taxes such a performance seems almost incredible, but the bald fact stares one in the eye from the pages of the main estimates.

## Comptroller Installed

During the past three or four years there have been some considerable irregularities in department finances, due in almost every case to the fact that certain officials who had been charged with financial responsibility were untrustworthy. These troubles, together with the absence of any effective means whereby departments could be compelled to keep within their appropriations, prompted the present Administration to reorganize the machinery of the Department of Finance. The principal result was the establishment of a new branch of that department, its head designated as Comptroller of the Treasury.

One important outcome has been that the Minister of Finance is enabled to secure actually a daily detailed report on the financial position of the various departments, which means he is able to maintain a continuous control over expenditure, as well as being furnished almost up-to-the-minute information regarding revenues. Such a system makes the whole governmental machine infinitely more responsive to revenue limitations and must command a deeper respect from private business concerns and taxpayers generally who have been long led to expect rigorous business principles applied in Ottawa but who have long been disappointed.

## Daily Check

Under the new system the Comptroller of the Treasury not only maintains a close daily check on the accounts of the various departments through his staff of 1,100 distributed through the departments, but through the Comptroller of the Treasury the Department of Finance issues all the cheques, pays all the accounts. Above a certain limited sum a department cannot incur a new expenditure until the proposed outlay has been approved by the Comptroller or his representative in the department concerned. All these duties are entirely different from those of the Auditor-General's branch which has to see that there are vouchers for every cheque issued. In recent years however, the Auditor-general in his annual report has seen fit to speak critically of financial affairs in various departments.

Another source of trouble many times has been the expense accounts not only of government officials but also of legislators. Just

because it is the public purse upon which they are drawing those paid out of the public treasury are not always too careful as to the distinction between public and private expenditure. A much closer check upon these expense accounts is certain to be a part of the new fiduciary system.

One big task is to see that departments do not permit their expenditures to exceed their appropriations, to see that they cut their suit according to their cloth; another task is to see that in the first instance, in committee of supply and in the estimates originally submitted to Parliament, the amounts asked for are not in excess of reasonable requirement and are also made readily ascertainable to those called upon to discuss and vote the money.

## THE TREND OF PRODUCTION COSTS

Commodity prices, as measured by the Dominion Bureau of Statistics index number which is based on the year 1926, advanced slightly from 66.8 in August to 68.9 in September. The following is a comparison by main groups:

| | Sept. 1931 | Aug. 1932 | Sept. 1932 |
|---|---|---|---|
| Foods, beverages & tobacco | 66.9 | 61.1 | 61.8 |
| Other consumers' goods | 79.4 | 78.6 | 78.9 |
| All consumers' goods | 74.4 | 71.6 | 72.1 |
| Producers' equipment | 89.3 | 88.1 | 88.1 |
| Building & construction materials | 79.9 | 75.7 | 76.5 |
| Manufacturers' materials | 58.5 | 57.0 | 55.9 |
| All producers' materials | 62.4 | 60.4 | 59.6 |
| All producers' goods | 65.1 | 63.2 | 62.5 |
| All commodities | 69.7 | 66.8 | 66.9 |

The principal declines in September were in the following: Grains, livestock, silver, and sulphur. The principal increases in September were in the following: Hides & skins, milk & its products, fats, eggs, sash cord, brass & copper, and lead.

## TORONTO CHECKS UP ON ACCOUNTING METHODS

Six accountants have been appointed by the City of Toronto to serve without fee on a study of the compilation of costs and the levy of assessments for local improvements. They are as follows: W. D. Glendinning, C.A.; Henry Glover, C.A.; Fred Page Higgins, C.A.; G. M. Mulholland, F.C.A.; W. H. Pettit, C.A., and Ralph E. Young, C.A.

The city authorities are also appointing a special commission of seven accountants to study the establishment of a uniform cost accounting system for Toronto hospitals.

## VANCOUVER CHAPTER ORGANIZES STUDY GROUP

A cost accounting study group has been organized under the auspices of our Vancouver Chapter, with Mr. C. A. Hill as lecturer. One meeting a month is held. The fee for the series is $5. Applications for the course number 22.

# Cost Accounting Examination Papers

The following are the Cost Accounting papers set in the first and second examination conducted by the Montreal Board of Trade in conjunction with our Society this year.

**First Examination Cost Accounting**
**Time 7-10 P.M.**

Marks

14. 1. Define, briefly, the following—
   (a) Prime Cost
   (b) Process Cost Systems
   (c) Factory Order
   (d) Production Centre.

12. 2. Name the advantages of a properly devised perpetual inventory and stores control system?

11. 3. Name and define two methods of pricing issues of materials from stores.

15. 4. (a) Draw up a Stores Ledger Sheet.
   (b) Enter on your sheet prepared in (a) information required to record the following transactions for article No. XYZ
      (1) April 1st—Balance on hand—2400 units @ 80c per unit.
      (2) " 3rd—Order placed on A. B. C. Corp., Pur. Req. 1592 Pur. Order No .1714 —1500 units.
      (3) " 10th—Received on above order 840 units @ 75c per unit.
      (4) " 15th—Issued on Req. No. 196—320 units.

18. 5. A Company has been paying wages on the straight hourly basis. The management is considering the adoption of a Differential Piece Work Plan of payment as a means of reducing their cost of production, and a scale of rates has been prepared. At the present time, the average production per workman, for an eight hour day, is 120 units and the average hourly wage is 60c.

The suggested scale of Piece Work payment is as follows:

| | | |
|---|---|---|
| Up to 120 units | ..... | 4 c per unit |
| 120 to 135 " | ..... | 4½c per unit |
| 135 to 150 " | ..... | 5 c per unit |
| 150 to 165 " | ..... | 5½c per unit |
| 165 to 180 " | ..... | 6 c per unit |

The rate for Factory Overhead has been estimated at 80c per hour. You are asked whether the Company would gain or lose by establishing the proposed scale.

What do you advise?

Prepare a schedule to support your advice.

30. 6. The Phillips' Corporation, Biscuit Manufacturers, operate four productive departments—
   (1) Mixers
   (2) Bakeshop
   (3) Chocolate Room
   (4) Boxing & Labelling

and three Service Departments
   (5) Store Room

(6) Power Plant
(7) Machine Shop

(a) The following charges appear on their records for the month of April—

| | |
|---|---|
| Indirect Labour (Productive Depts. only) | $2875 |
| Light | 2250 |
| Insurance on Equipment and Stock | 720 |
| Rent | 3000 |
| Coal (Power Plant) | 960 |
| Sundry Factory Expense | 900 |

(b) The Pay-Roll showed the following Direct Labour charge for the month.

| | | |
|---|---|---|
| (1) | Mixers | $1260 |
| (2) | Bakeshop | 1650 |
| (3) | Chocolate Room | 1800 |
| (4) | Boxing & Labelling | 1040 |
| (5) | Storeroom | 520 |
| (6) | Power Plant | 880 |
| (7) | Machine Shop | 1400 |

(c) The following information is available

| Department | Sq. ft. of floor space occupied | Productive Labour Hours | Valuation of Equip. | H.P. Hours | No. 100 Watt lamps used | Materials issued from stores |
|---|---|---|---|---|---|---|
| (1) Mixers | 12000 sq. ft. | 3800 | $20,400 | 7,600 | 15 | $11,800 |
| (2) Bakeshop | 27000 | 4700 | 39,000 | 16,400 | 35 | ..... |
| (3) Choc. Room | 22000 | 5500 | 11,280 | 6,400 | 30 | 4,100 |
| (4) Boxing & Labelling | 19000 | 4000 | 2,400 | 3,600 | 24 | 2,600 |
| (5) Storeroom | 4000 | .... | 2,760 | .... | 8 | .... |
| (6) Power Plant. | 9000 | .... | 31,200 | .... | 20 | 600 |
| (7) Machine Shop | 7000 | .... | 10,320 | 6,000 | 18 | 900 |

(d) The Inventory carried in the Storeroom for the month averaged $26,640.

(e) The Sundry Factory Expense is to be distributed over the productive Departments in the following ratio—
Mixers 20%, Bakeshop 30%, Choc. Room 30%, Boxing & Labelling 20%.

(f) Depreciation on Equipment is to be charged at the rate of 10% per annum.

(g) Storeroom Expense is to be distributed over the other departments in the ratio of materials issued.

(h) Power House Expense is to be distributed in the ratio of the Horse Powers Hours for the month.

(i) The following charges for repairs have to be made against the departments concerned and credited to the machine shop.

| | |
|---|---|
| Mixers | $840 |
| Bakeshop | 1500 |
| Chocolate Room | 450 |
| Boxing & Labelling | 210 |

Any undistributed Balance remaining as a charge against the Machine Shop should be distributed over the above departments in the ratio of repairs already charged.

(j) Submit schedule of distribution for the month of April to show—
  (a) The total Amouna of Factory Overhead chargeable to each Productive Department, and
  (b) The total Amount of Factory Overhead charpartment per Productive Labour Hour.

**Second Examination Advanced Cost Accounting**
**Time 7-10 P.M.**

Marks

12 1. Assuming that a process cost system is in force, enumerate briefly how the inventory value of a unit of finished product in a department is secured at the end of a given accounting period when there is no inventory of unfinished work to be considered.

18 2. Assuming that in a cost accounting system a complete separate factory ledger is maintained and controlled by a "Factory Ledger Account" in the general ledger, give the necessary entries to reflect the following transactions both in the factory ledger and in the general ledger:

(a) Total amount of merchandise and supplies purchased during the cost period, as shown by the purchase records or voucher register.

(b) The total amount of productive and non-productive labour for the period as shown by the payroll analysis.

(c) The total amount of factory overhead expenses for the period as shown by the purchase records or voucher register and the fixed schedules or miscellaneous analysis records.

(d) The total cost of finished merchandise returned during the cost period as shown by the summary of cost returns.

(e) The total cost of goods sold as shown by the summary of the cost of sales.

(f) The total cost of fixed assets constructed and transferred to the administrative department of the business.

14 3. (a) Define a By-product.

(b) Describe briefly three methods in which the accounting for a by-product can be treated in relation to the main product.

12 4. Define Idle Time and give three causes through which it may occur with the departmental responsibility for each of the causes.

12 5. State briefly what main factors should be considered in introducing the following standard costs into a process cost accounting system.

(a) Standard material costs.
(b) Standard labour costs.
(c) Standard manufacturing expense costs.

10 6. Work on Order No. 4403 was started at 9.45 a.m. and continued with one hour intermission for lunch, until 1.30 p.m. when work on it was stopped and a rush Order Number 4419 was started in order to complete it by 4.00 p.m. It was completed at 4.00 p.m. and work on Order No. 4403 was resumed. As Order No. 4403 was promised the first thing the next morning it was necessary to work one hour overtime, from 4.30 to 5.30 to complete it. James Morris, who did the work, was paid 60c an hour, with time and one half for overtime.

What is the labour cost chargeable to each order? Give reasons for your apportionment of the labour cost.

7. The following is the total balance of the Alpha Manufacturing Company as at 31st December, 1931.

| | Dr. | Cr. |
|---|---|---|
| Cash in Bank | 5,000.00 | |
| Accounts Receivable | 50,000.00 | |
| Inventories 31st December, 1930 | 20,000.00 | |
| Fixed Assets | 40,000.00 | |
| Bank Loans | | 35,000.00 |
| Accounts Payable | | 35,000.00 |
| Mortgage Payable 6% due 1932 | | 30,000.00 |
| Capital Stock issued—being all the authorized capital and divided into 350 common shares of a par value of $100. each | | 35,000.00 |
| Surplus Account 31st December, 1930 | | 16,400.00 |
| Purchases including freight—Raw Materials | 60,000.00 | |
| Direct Labour | 40,000.00 | |
| Indirect Labour | 5,000.00 | |
| Factory Light. Heat and Power | 3,000.00 | |
| Factory Insurance and Taxes | 6,000.00 | |
| Factory Supplies | 2,000.00 | |
| Advertising | 1,000.00 | |
| Salesmen's Salaries & Commissions | 4,000.00 | |
| Executive Salary | 7,000.00 | |
| Cartage on Sales | 1,500.00 | |
| Office Salaries | 4,000.00 | |
| Stationery and Printing | 500.00 | |
| Telephones & Telegrams | 300.00 | |
| Legal and Audit Fees | 600.00 | |
| General Office Expenses | 1,000.00 | |
| Interest and Exchange | 3,500.00 | |
| Sales | | 105,000.00 |
| Sales office salaries | 2,000.00 | |
| | $256,400.00 | 256,400.00 |

(a) Depreciation during the year on plant and equipment and factory buildings amounted to $2,000.

(b) It is necessary to set up a reserve for bad debts of $5,000.

(c) The details of the inventories at 31st December, 1930 and 31st December, 1931 are as follows:

| | 1930 | 1931 |
|---|---|---|
| Raw Materials | 10,000.00 | 20,000.00 |
| Work in Process | 5,000.00 | 10,000.00 |
| Finished Goods | 5,000.00 | 15,000.00 |
| | $20,000.00 | 45,000.00 |

From the above information you are required to prepare:

4 1. Statement of the cost of goods manufactured for the year ended 31st December, 1931.

4 2. Statement of trading and profit and loss for the year ended 31st December, 1931.

4 3. Balance Sheet as at 31st December, 1931.
10 4. A brief report to the president of the company outlining to him the favourable or unfavourable factors in the year's operations which the above statements disclose.

100

### Second Examination Industrial Organization

Time—7 to 10 p.m.

1. Contrast the personal characteristics, and management principles employed by the "Captains of Industry" and "Professional Administrators".
2. Enumerate the responsibilities of an industrial management, and explain by means of a diagram what is meant by the administrative pyramid.
3. Discuss fully the subject of "Functional Foremanship" and relate it to the duties of a "Planning Room."
4. Describe the departmental functions involved in the control of materials, tracing the system through from the issue of the purchase order for raw material to the shipping of the finished product.
5. Distinguish between fatigue and overstrain. What are the main factors to be considered when making a study of fatigue control or elimination?
6. Outline the functions of a Personnel Department, and enumerate the chief causes of labor turnover.
7. Describe how wages are calculated under the "Gantt Bonus System" and show by means of a diagram the variations in wages and costs depending upon the rate of performance.

---

Visitor: "What a magnificient library you have!"

Millionaire: "Yes. When I think of the pile of money I've sunk in that collection of books it makes me feel quite intellectual."

* * * *

"And at her request you gave up drinking?"

"Yes."

"And you stopped smoking for the same reason?"

"Yes."

"And it was for her that you gave up dancing, card parties, and billiards?"

"Absolutely."

"Then why did'nt you marry her?"

"Well, after all this reforming I realized I could do better."

* * * *

He: "Pardon me, did you drop your handkerchief during the last dance?"

"Oh, I was never so embarrassed in my life. That's my dress."

* * * *

Small Son: Grandpa, when are you going to play football?

Grandpa: Football—I don't play football.

Small Son. But dad said we'd get a new car as soon as you kicked off.

## NEW MEMBERS

The following are new members of the Society:

### Montreal Chapter

McLean, J. Harold, C.G.A., C.P.A., 388 St. James St. West, Montreal.
Hoskins, H. M., C.A., Price, Waterhouse & Co., Montreal.
Bentley, Wm., C.G.A., McGill University, Montreal.
Cartier, A., Montreal Tramways Commission, Montreal.
Henry, W. S., Sun Life Assurance Co. of Canada, Montreal.

### Toronto Chapter

Banigan, J., B.A.Sc., De Haviland Aircraft of Canada, Ltd., Toronto.
Conrad, H. S., Geo. Weston Bread & Cakes, Ltd., Toronto.
Dilworth, R. W. E., C.A., Clarkson, Gordon, Dilworth, Guilfoyle & Nash, Toronto.
Hector, R. H. B., Elias Rogers Co., Ltd., Toronto.
Morrison, M. E. H., Wm. Neilson, Ltd., Toronto.
Howard, E. F., International Petroleum Co. Ltd., Toronto.
Ireland, W. F., Corrugated Paper Box Co. Ltd., Toronto.
Carr, A. H., C.A., Dominion Association of Chartered Accountants, Toronto.
Harvey, F., Felt & Tarrant, Ltd., Toronto.
Carroll, F. J., Felt & Tarrant, Ltd., Toronto.

### Hamilton Chapter

Henry, H. G., United Fuel Investments, Ltd., Hamilton.
Howey, A. G., Mercury Mills, Ltd., Hamilton.
Pratt, P. B., International Business Machines Co., Ltd., Hamilton.

### Central Ontario Chapter

Collins, J. L., C.A., Mutual Life Assurance Co. of Canada, Waterloo.

## DOMINION BOARD MEETS IN MONTREAL

A meeting of the directors of the Society was held on Friday, October 21st, at the Mount Stephen Club, Montreal, where president L. A. Peto was host. Those present were, L. Belanger, R. W. Louthood, J. P. Masterson, L. A. Peto, L. Rhodes, and R. R. Thompson, as members of the Dominion Board, W. A. McKague, general secretary, and most of the directors of Montreal Chapter, who had been invited for the discussion. Most of the time was spent in considering the matter of Society examinations, and it was decided to continue the facilities now offered to candidates.

# CHAPTER NOTES

## TORONTO

Reported by F. E. Brooks

The regular October meeting of the Toronto Chapter was held in the Royal York Hotel, with Mr. W. M. Lane in the chair. An innovation at this meeting was the introduction of the identification badges for members which serve the dual purpose of identification and attendance control.

The speaker was Mr. H. R. Hatcher of the Canadian Westinghouse Company, Limited, and his subject was "Control of Electrical Power Costs". In introducing the speaker, Mr. Lane referred to Mr. Hatcher's early experiences as one of a goup of prominent men of Essex County who took part in the early organization meetings of the "Hydro" in Ontario. In addition Mr. Hatcher was for some time Mayor of Walkerville, Ontario, and he also enjoys the distinction of being one of the very few men who have defeated Gar Wood, of American Cup fame, in speed boat racing. For more than ten years he has been associated with the Canadian Westinghouse Company, Limited, assisting electrical power consumers in the solution of their problems.

Mr. Hatcher's excellent and interesting talk contained many suggestions, which if followed by electrical power consumers would result in power cost economies. In the course of his remarks he stated that the greatest economies could be effected by control of the power factor through study of the peak demand by the various departments. Production programmes, too, should be so developed as to correct the peak load factor.

During the course of the general discussion which followed Mr. Hatchers speech, it was pointed out that the Hydro-Electric System would install graphic meters for checking power load, free of charge, and would leave them installed for a period of seven or ten days while tests were made.

## VANCOUVER

Reported by M. Willis, Secretary-Treasurer

Meeting for the first time this season on October 11th at 8 p.m., the members of the Vancouver Chapter had the privilege of hearing a very interesting talk by one of their number, Mr. E. A. Cowley of the International Business Machines, on the "Duty of the Cost Accountant to the Executive", given in the Connaught Room of the Hotel Georgia.

Mr. Cowley in his talk, which we hope to see in print soon, stressed the fact that cost Accountants should sell their ideas to the executive; sit by him and explain what the reports, graphs or charts mean and what benefit can be derived from them. The accountant prepares them and should be able to sell his own production.

Some foremen, he stated, are cost accountants in disguise who calculate their costs of operating machines in their own way but who look upon the figures furnished by the office as a lot of 'red tape'. Why not educate the foremen and show them that the office figures tell no lies but will help to achieve the goal of reducing their costs.

Many workmen through carelessness, Mr. Cowley pointed out, spoil a piece of machinery and do not think anything about it as they do not think of the cost of labour expended on the work believing that the only loss is the actual value of the material which may only be a few cents. It is therefore up to the Cost Accountant to sell his ideas to the factory as well as to the Executive.

Mr. Harvey, C.A. stated that he had not met many foremen who were "cost accountants in disguise" but that his experience was that they "held cost accountants in disgust".

Though the turn out for this meeting was not as good as expected yet everyone present voiced the fact that they appreciated Mr. Cowley's talk very much and hoped they would have the pleasure of hearing him speak again this season.

The next meeting of Vancouver Chapter will be held on November 8th in the Board Room of Associated Dairies, Ltd., the speaker to be Mr. P. J. Sclater, C.A., comptroller of the Vancouver Sun, and his subject "The Making of a Modern Newspaper".

Come on you members, these meetings are arranged for your benefit and if you want any special programme brought up why not let your directors know for they are not mind readers.

## CENTRAL ONTARIO CHAPTER

Reported by C. B. Taylor, Secretary-Treasurer

The October meeting of this Chapter was held in Guelph on October 19th, at the Garrison Club and was a joint meeting of the Hamilton and Central Ontario Chapters. Hamilton was well represented, and about thirty members in all were present. Dinner was served at 6.45 p.m. and our worthy Chairman, Mr. Earnshaw was the recipient of many favourable comments. How the boys did go for those fresh raspberries and cream.

The speaker for the evening was Mr. G. E. Steel of Sangamo Electric Co. Ltd., Toronto, whose subject "Production Control", met with real interest as evidenced by the discussion which resulted therefrom. Mr. Steel stressed the point that varied production problems quite naturally must require varied methods of securing the necessary control. In his experience it had been essential to divide production into three major types, i.e., Line Production—Intermittent—and Intermittent Recurring. In each class different methods were employed to secure the desired control. Each class of production was dealt with in a very comprehensive manner. At the conclusion of Mr. Steel's address, a very hearty vote of thanks was extended and the wish expressed that we might again have the privilege of hearing him.

# REFERENCE LITERATURE

## RECEIVED IN OCTOBER

Transport Accounting, General Principles of an Efficient System of. The Accountant, Sept. 24.

Tabulating Machinery and its Application to Accountancy Problems. The Accountant, Oct. 15.

Fire Insurance Costs, Interest Charges in Connection With. Canadian Chartered Accountant, Oct.

Employee Absenteeism and Tardiness. National Association of Cost Accountants Bulletin, Oct.

Sales Manager Make of Manufacturing Costs, What Use Can the. National Association of Cost Accountants Bulletin, Oct. 1.

Motion Picture Production, Cost Accounting for. National Association of Cost Accountants Bulletin, Oct. 15.

Mine Accounting. National Association of Cost Accountants Bulletin, Oct. 15.

Production, Control of Factory. The Cost Accountant, Sept.

Motor Industry, Foundry Costing for. The Cost Accountant, Oct.

Bin-cards. The Cost Accountant, Oct.

Ratios, Comparison of. Certified Public Accountant, Oct.

Shoe Manufacturing Industry. Journal of Accountancy, Oct.

Public Utility Regulation, Working Capital in. Journal of Accountancy, Oct.

Manufacturing Expense Budget. Manufacturing & Industrial Engineering, Oct.

Depreciation Reconsidered. Accountants Journal, Oct.

Sectional Balancing of a Large Set of Books, Best Practical Means of Providing for. Accountants Journal, Oct.

Brick Companies, Accounts of. The Accountant in Australia, Sept.

Cartoons, Cost Control in Production of. American Accountant, Oct.

Depreciation Reserves on the Balance Sheet, Treatment of. American Accountant, Oct.

Year Book, 1932, of National Association of Cost Accountants.

## PERSONAL ITEMS

G. Abrams, C.A., formerly with Sharp, Milne & Co., Toronto, is now with the firm of J. P. Langley & Co., Toronto.

Frank M. Harvey, F.C.A., of Harvey & Morrison, Calgary, who has been a member of our Society for several years, was elected president of the Dominion Association of Chartered Accountants at their annual meeting held recently at St. John, N.B.

We regret to learn of the death of E. H. Giske, C.A., a member of our Society for several years, who has been practicing under his own name in Vancouver.